



# Where Land & Water Meet



*Guidance on Wetlands- Identification, Functions, and  
State Jurisdiction*

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DEC Wetland Ecologist

# VT Wetland Definition

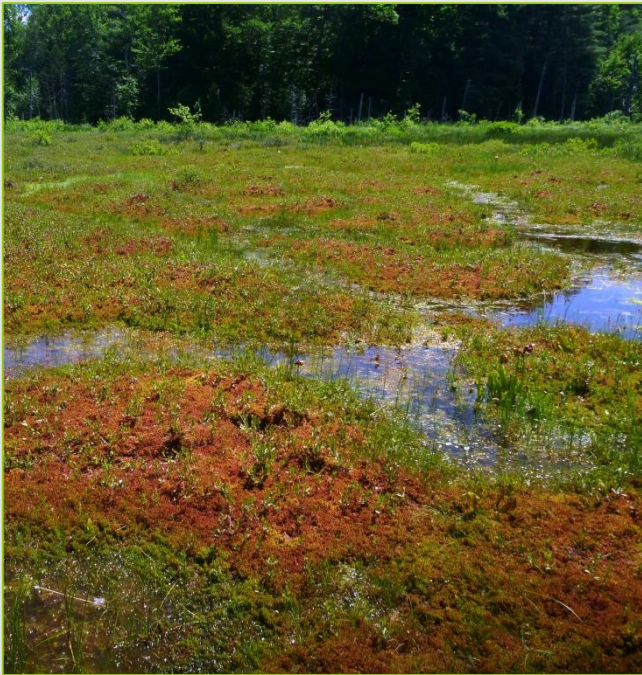


☞ “Those areas of the state that are inundated by surface or ground water with a frequency sufficient to support significant vegetation or aquatic life that depend on saturated or seasonally saturated soils conditions for growth and reproduction.” (VWR § 2.41)



# Wetland Identification

☞ Wetlands are a combination of:



Hydrology



Hydric Soils



Hydrophytic  
Vegetation



# Wetlands Types

## Wetland Types

- Buttonbush swamp
- Sweet gale shoreline swamp
- Lakeside floodplain forest
- Pitch pine woodland bog
- Deep bulrush marsh
- Red or silver maple-green ash swamp
- Silver maple-sensitive fern riverine floodplain forest
- Dwarf shrub bog
- Cattail marsh
- Deep broadleaf marsh



# Inconspicuous Wetlands





# Vermont's Wetlands Provide



**10 FUNCTIONS and VALUES**



# Water Storage for flood and stormwater runoff



- ☞ Reduces rate & volume of runoff to decrease risk of flood damage to infrastructure and habitat downstream
- ☞ Study conducted by the Gund Institute & UVM found that the Otter Creek floodplains saved Middlebury \$1.8 million from flood damage during tropical storm Irene





# Surface & Ground Water Protection



- ❧ Trap sediment, moderate base flows, and assimilate many pollutants
- ❧ There is a limit to inputs before the system overloads





# Fish Habitat



- Wetlands can contribute directly and indirectly to fish habitat





# Wildlife Habitat



- ❧ 80% of America's breeding bird population & more than 400 species of protected migratory birds rely on wetlands
- ❧ Biodiversity hotspots





# Exemplary Wetland Natural Community



- ❧ Wetlands make up 5% of the earth's landsurface, but host 31% of the world's plants.
- ❧ Riverine Floodplain Forests
- ❧ Lakeside Floodplain Forests
- ❧ Dwarf Shrub Woodland Bog
- ❧ Rich Fen
- ❧ Northern White Cedar Swamps





# Rare, Threatened, & Endangered Species

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- ❧ 43% of TE species in the US rely directly or indirectly on wetlands



# Education & Research in Natural Sciences



- ✧ Provide opportunities in scientific research, monitoring studies, and education experiences for all age demographics





# Recreational value & Economic benefits



- ❧ Hunting & fishing
- ❧ Hiking & paddling
- ❧ Harvesting of wild foods
- ❧ Bird watching & wildlife viewing



# Open Space & Aesthetics



- ✧ Distinct features in the landscape
- ✧ Important open spaces to the public





# Erosion control through binding & stabilizing the soil



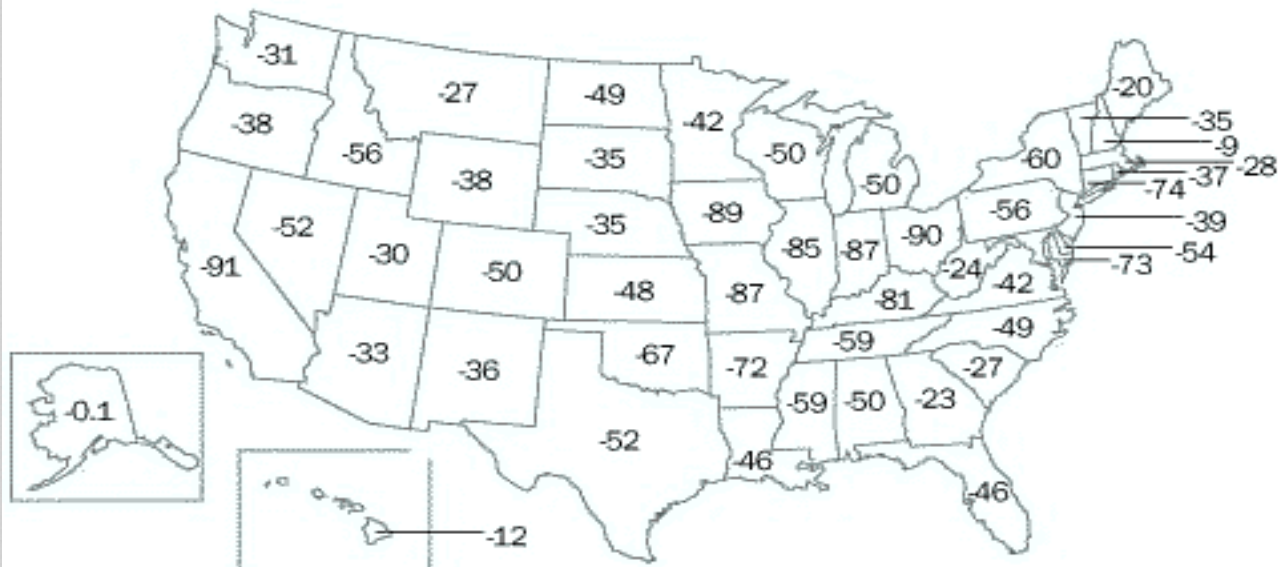
- ☞ Naturally vegetated wetlands stabilize banks and shores to reduce sediment loss due to erosive forces
- ☞ Plants bind soils and absorb energy



# Wetland History

- ✎ Agriculture accounted for 87% of wetland loss before 1950s

**Percentage of Wetlands Acreage Lost, 1780's-1980's**



Twenty-two states have lost at least 50 percent of their original wetlands. Seven states—Indiana, Illinois, Missouri, Kentucky, Iowa, California, and Ohio—have lost over 80 percent of their original wetlands. Since the 1970's, the most extensive losses of wetlands have been in Louisiana, Mississippi, Arkansas, Florida, South Carolina, and North Carolina.

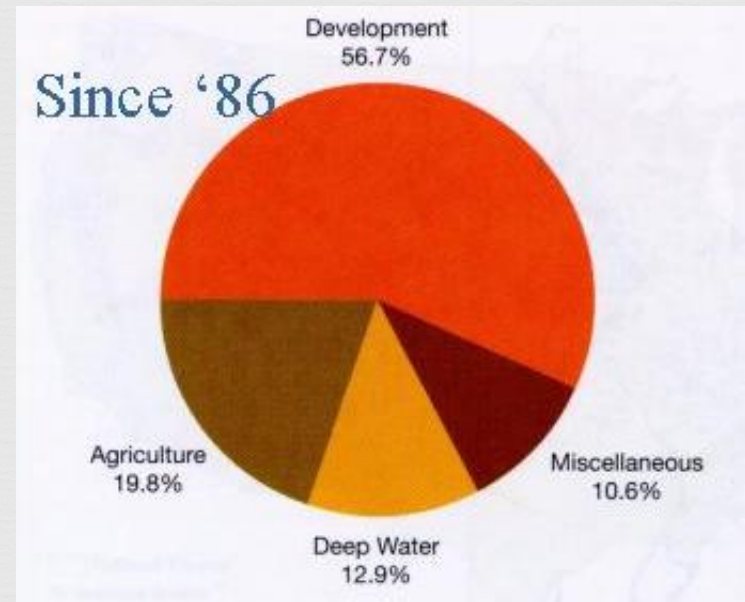
Source: Mitch and Gosselink. Wetlands. 2nd Edition, Van Nostrand Reinhold, 1993



# Wetland History

- ❧ 45-75% of wetland loss in US is from residential, commercial and industrial development
- ❧ 90% of wetland loss in NE is from residential, commercial and industrial development

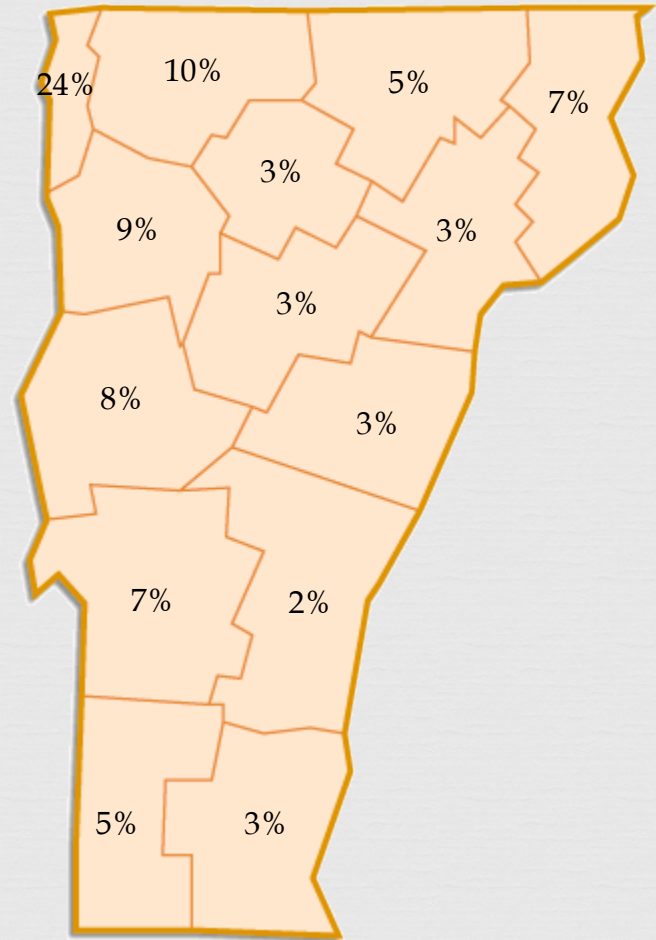
Wetland Loss by Category in U.S.



# Vermont Wetlands

❧ 35% of wetland acreage loss before 1980.

County	% Total Acres Mapped Wetland
Grand Isle	24%
Franklin	10%
Chittenden	9%
Addison	8%
Essex	7%
Rutland	7%
Orleans	5%
Bennington	5%
Lamoille	3%
Windham	3%
Caledonia	3%
Orange	3%
Washington	3%
Windsor	2%





# Vermont Wetland Rules



- ❧ Those wetlands deemed significant enough to be protected based on their function and value
- ❧ Implemented in 1990
- ❧ Significant rule change in 2010

# 2006 VT Wetland Mapping Study



- ❧ UVM study looked at Charlotte and Hinesburg.
- ❧ Used the aerial imagery with double the original resolution.
- ❧ Results
  - ❧ Number of wetlands increased from 383 (4.7%) to 1791 (7.7%).
  - ❧ NWI missed smaller wetlands and forested wetlands
  - ❧ NWI underestimates the extent of wetlands by 39%



# VT Wetland Classification



- Based on an evaluation of the extent to which the wetland provides functions and values:
  - Class I Wetland:* Exceptional or irreplaceable in its contribution to Vermont's natural heritage and therefore, merits the highest level of protection (via rulemaking)
  - Class II Wetland:* Merits protection, either taken alone or in conjunction with other wetlands
  - Class III Wetland:* Neither Class I or Class II wetland



# Jurisdictional Wetlands- Criteria

- ❧ Any wetland on the VSWI map
- ❧ Any wetland contiguous or connected to the VSWI mapped wetland
- ❧ Any wetland that is the same type and size as what is on the VSWI maps (1/2 acre or larger)



- ❧ Wetlands over or under a half acre that are:
  - ❧ adjacent to a stream, lake, pond, or river
  - ❧ vernal pools
  - ❧ special and unique wetlands like bogs or fens
  - ❧ headwaters above 2,500 feet elevation

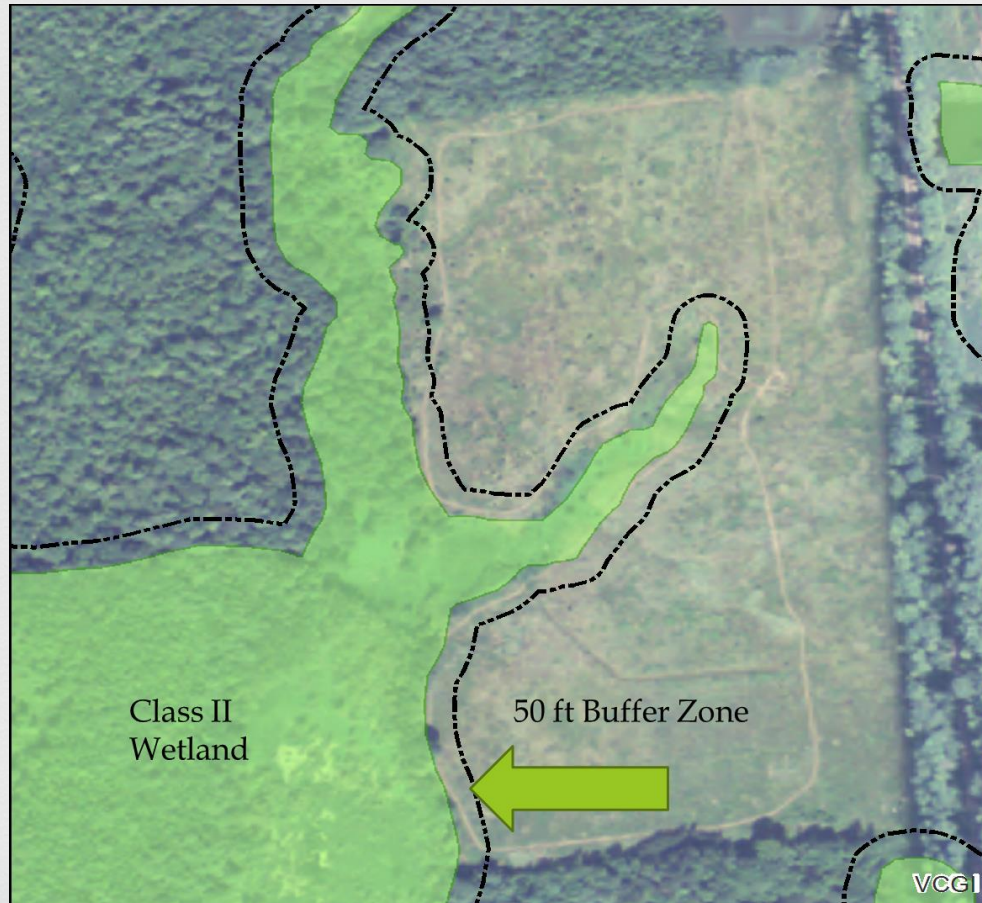


# Buffer Zones



- ❧ Definition: Area of upland around a wetland
- ❧ Functions: Protects wetland from disturbance, water quality protection, wildlife, others
- ❧ Width changes with state wetland classification:
  - ❧ Class One Wetland = 100 foot buffer (default)
  - ❧ Class Two Wetland = 50 foot buffer

# Jurisdictional Area





# Regulation



⌘ Exempt Activities (Section 3.1)

⌘ Allowed Uses (Section 6)

⌘ Permitting (Section 9)

# Exemptions (VWR §3.1)



- ❧ Farming exemption- The growing of food or crop in connection with farming activities
  - ❧ Limitation: only areas that have been in ordinary rotation since the effective date of the VWR (1990). The exemption expires whenever the area is no longer used to grow food or crops or in ordinary rotation.
- ❧ Existing constructed features- the following man-made features, which when constructed in uplands may exhibit wetland characteristics:
  - ❧ Stormwater conveyance, treatment and/or control systems
  - ❧ Wastewater treatment ponds and sludge lagoons
  - ❧ Manure storage and treatment ponds
  - ❧ Irrigation and active farming-related ponds
  - ❧ Snowmaking ponds
  - ❧ Other similar constructed ponds created in uplands.
- ❧ Permitted public highway projects- only if it has received an Act 250 permit prior to VWR (1990).



# Allowed Uses (VWR §6)

- ❧ Silvicultural Activities (see guidance doc)
- ❧ Growing of food or crops in connection with farming (pending guidance doc)
- ❧ Operation of Hydro Facilities
- ❧ Hunting, hiking, boating, snowshoeing
- ❧ Snowmobiling on VAST trails
- ❧ Scientific research and educational activities
- ❧ Maintenance or non-substantial modification of existing structures.
- ❧ Placement of foodbridges, duck blinds
- ❧ **Wildlife or fisheries management (approved plan)**
- ❧ **Control of non-native or nuisance plants (approved plan)**
- ❧ **Wetland or stream restoration projects (approved plan)**
- ❧ Clean up activities for spills
- ❧ Operation of dams
- ❧ Activities within existing lawns
- ❧ ....and more

# Is a Permit Required?



## YES

- Activity occurs in a Class I or II wetland or buffer zone and is not considered an allowed use
  - Grading, filling, ditching or dredging
  - Removal of vegetation such as tree cutting, mowing, or conversion
  - Construction of buildings, roads, buried utilities or infrastructure

## NO

- Activity occurs in a Class III wetland (still reviewed by ACOE and Act 250)
- No activity proposed in Class II or Class I wetland or buffer.
- Activity qualifies as an allowed use.



## Wetland Permit Application Fees Starting July 1, 2015

Administrative fee: \$240

Wetland impact fee: \$0.75 per square foot (unchanged)

Wetland buffer impact fee: \$0.25 per square foot (unchanged)

Wetland impact fee for linear clearing: \$0.25 per square foot (unchanged)

Wetland “after-the-fact” impact fee: \$1.50 per square foot

Minimum Application Fee: \$50 (applied when impact fees total <\$50)  
(unchanged)

Cropland Conversion Flat Fee: \$200 (unchanged)

Application Revision Fee: \$100

→ Fee exemptions have been removed for municipalities and VTrans. All of the above fees are now applicable to all applicants.

# General Permit (GP)\*\*



## Qualifications\*

- ❧ Project with minor impacts
  - ❧ Must meet square footage threshold for complete project and BMPs
- ❧ Not for after-the-fact impacts or special wetland types

## How GP differs from IP

- ❧ Shorter application
- ❧ Simpler notice
- ❧ Shorter public comment period
- ❧ Non-linear projects:
  - ❧ < 3,000 sq. ft. managed areas
  - ❧ < 1,000 sq. ft. natural areas
  - ❧ < 150 sq. ft. surface water margins

\*see limitations on coverage (VT Wetland General Permit 3-9025 §3)

\*\*conditions are already defined



# Individual Permit (IP)



## Qualifications

- ❧ Activity exceeds thresholds of GP
- ❧ Activity was in violation
- ❧ Activity has an undue adverse impact
- ❧ Activity in Class I wetland or buffer
- ❧ Site has RTE species
- ❧ Site has special wetlands
- ❧ Site has headwater wetlands

## How IP differs from GP

- ❧ Requires an approved professional wetland delineation
- ❧ Requires a Functions and Values evaluation
- ❧ Has a longer notice period
- ❧ Requires a complete distribution to abutters

# Avoidance and Minimization



- ❧ Must demonstrate there is no other practicable alternative on property owned or available that avoids wetland and buffer impacts
- ❧ Must use project design to avoid impacts to wetlands, buffers and their functions and values to the greatest extent possible
- ❧ Must offset potential impacts if they are unavoidable through minimization or restoration



# Can I get a Wetlands Permit?

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**It Depends...**

- ❧ Section 9.5 of the Rules: “Do you really need to impact the wetland?” “Will wetland function, acreage or value be lost?”
  - ❧ Can the activity be located outside of the wetland and still meet the basic project purpose? (avoid)
  - ❧ If the activity cannot happen outside of the wetland, can the activity still avoid adverse impacts to protected functions? (minimize)
  - ❧ If adverse impacts cannot be avoided, can the function be restored? (restore)
  - ❧ If there is a remaining adverse effect on function, will the function be compensated for elsewhere? (compensate)
- “No undue adverse effect on protected functions and values”*

# Vermont Wetland Tools



- ❧ Vermont Wetlands Program Homepage hosts:
  - ❧ Landowner's Guide to Wetlands
  - ❧ VT Wetlands Inventory Map and Tutorial
  - ❧ VT Wetland Inquiry Forms
  - ❧ Regulatory Links on the Wetlands homepage website
    - ❧ VT Wetland Rules
    - ❧ Individual Permit
    - ❧ General Permit
    - ❧ Instructions



# Wetlands Program Homepage

## Watershed Management

### Business and Operations

Vermont Clean Water Initiative

Lakes and Ponds

Monitoring, Assessment and Planning

Rivers

Stormwater

Wastewater

## Wetlands

What is a Wetland?

Wetland Functions and Values

Wetland Maps

Learn, Protect, Conserve and Restore

Jurisdictional Wetlands and Permitting

Allowed Uses and BMPs

Contact Wetlands Staff

All Resources

Publications and Resources

Publications and Resources

Funding Opportunities

## Welcome to the Wetlands Program

The Vermont Wetlands Program is responsible for identifying and protecting wetlands and the functions and values they provide by the implementation of the [Vermont Wetland Rules](#). Activities to achieve these goals include education, project review, and enforcement.

**UPDATE: The growing season has begun and verification of wetland boundaries may commence.**

**Please be patient in receiving a response as staff are in the field typically twice a week. To request a site visit, use our inquiry portal by clicking "Contact Wetlands Staff" on the left of the page.**

## Quick Links

- [Landowner's Guide to Wetlands](#)
- [Search Wetland Permits](#)
- [Wetland Permit Information](#)
- [Wetland Consultant List](#)
- [Wetlands Inventory Map](#)

## What's New

- [2015 Wetland Permit Fees](#)
- [Solar Power Guidance](#)
- [Vermont Wetlands Photo Gallery](#)
- [VT Wetlands Silviculture Guidance](#)



ALL RESOURCES



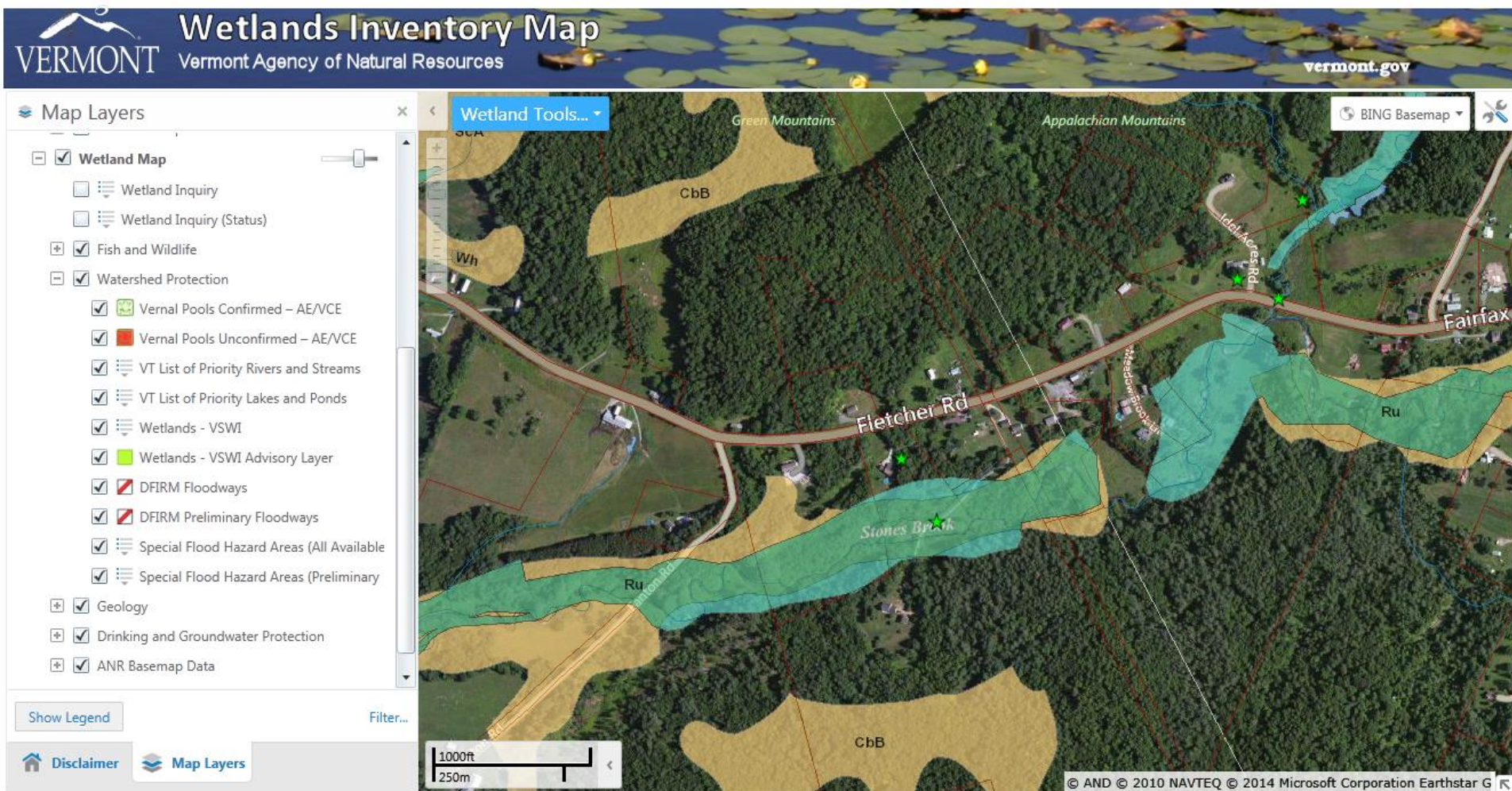
CONTACT WETLANDS STAFF



WETLAND FUNCTIONS AND  
VALUES

<http://www.watershedmanagement.vt.gov/wetlands.htm>

# Wetland Inventory Maps



<http://anrmaps.vermont.gov/websites/WetlandProjects/default.html>



# Wetlands Program Contact Page

## Drinking Water and Groundwater

Environmental Assistance

Environmental Enforcement

Facilities Engineering

Geological Survey

Waste Management and Prevention

Watershed Management

Business and Operations

Vermont Clean Water Initiative

Lakes and Ponds

Monitoring, Assessment and Planning

Rivers

Stormwater

Wastewater

Wetlands

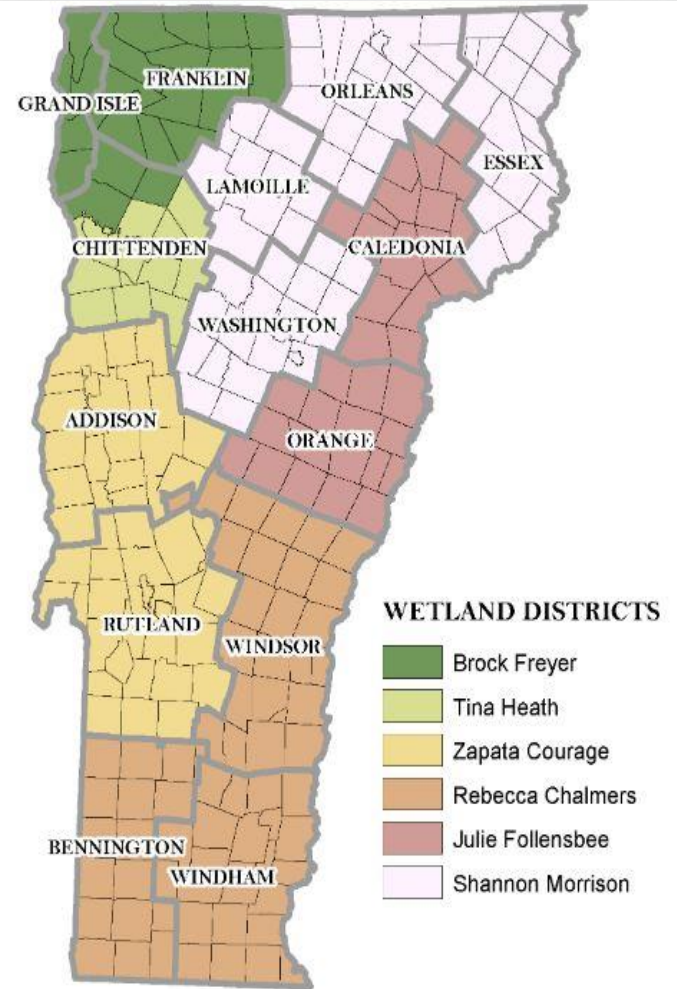
What is a Wetland?

Wetland Functions and Values

Wetland Maps

**Brock Freyer (Franklin, Grand Isle counties, and the towns of Colchester, Milton, and Westford)**

- Request Education, Training and Outreach Support - schedule wetland training, presentations, and other outreach activities.
- Request a Field Visit - Request the a property visit with landowner permission to review wetland presence and concerns for projects or land purchase.
- Request Project Review - Request review of design plans for a proposed project with wetland concerns.
- Request Status of Pending Permit - Find out the status of an existing wetland permit or wetland permit application.
- Report a Wetland Complaint or Violation - Report activity in a wetland or wetland buffer that may be in violation of the VT Wetland Rules.



# Updates





# Changes to Vermont Wetland Rules

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## ☞ 2017 VWR:

- ☞ Class I wetland additions
- ☞ Water Resources Panel Removal
- ☞ Act 150 – Application Notice & Amendment changes

# 3 NEW Class I wetlands



- ❧ Collaborated with other departments and members of the public to formulate an initial list, visited wetlands for evaluation through 2013
- ❧ Selected up to 10 wetlands to pursue for reclassification through winter of 2013-2014
- ❧ Created Rulemaking packages for four wetlands, held public meetings in 2015-2016
- ❧ Rulemaking 2016-2017, three wetlands to Class I



# Wetland Selection



- Exemplary natural communities
- Important wildlife corridors
- Rare wetland types
- Distribution throughout state
- Public interest

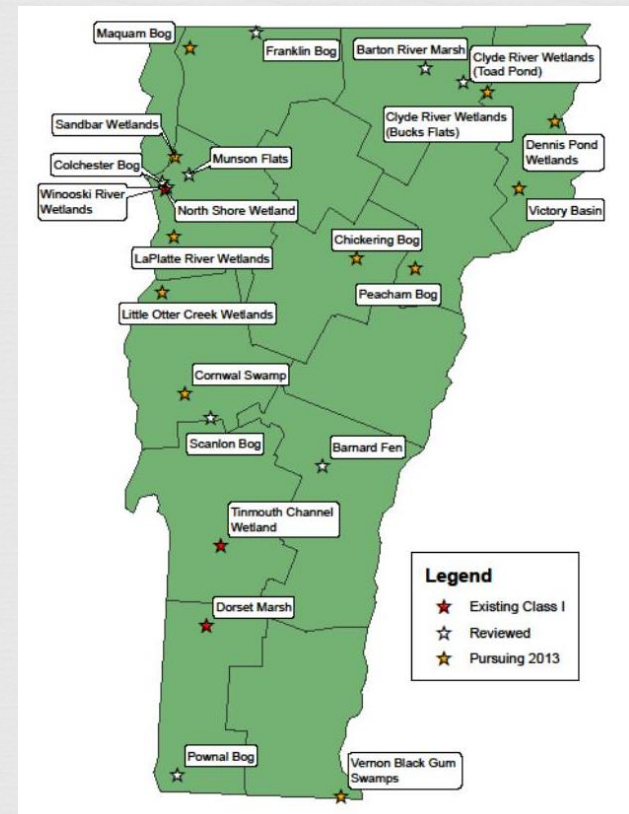
**Representative Example of a wetland type**

**Rare Community type**

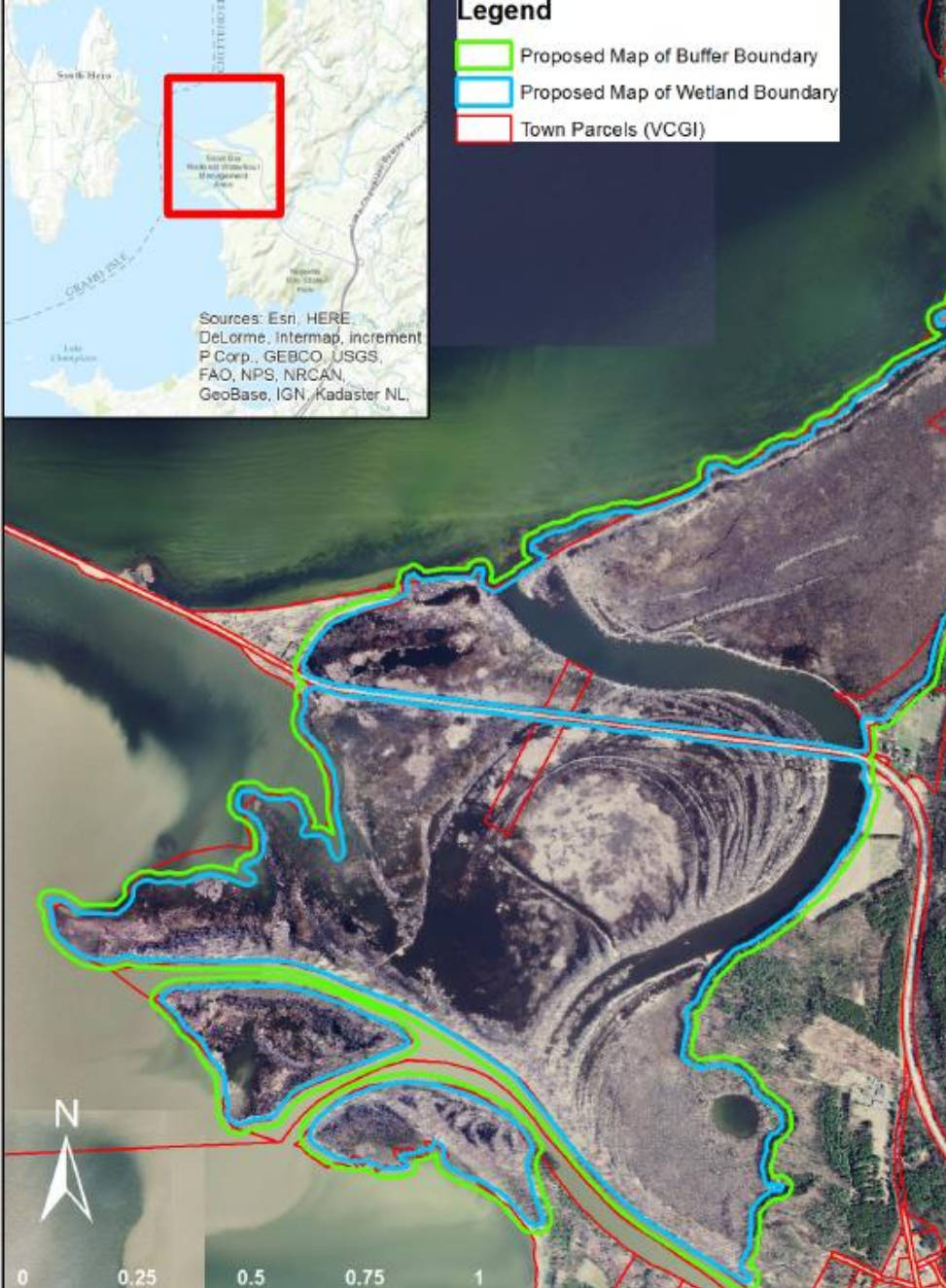
**Community Assemblage/Wetland Complex**

**Landscape Association**

Subcriteria: RTE, undisturbed condition, intact landscape, research/education, connectivity (wildlife)







## APPENDIX A - Class One Wetlands

This appendix lists those wetlands that have been designated as Class I wetlands as provided for in Section 7 of the Vermont Wetland Rules. The relative locations of these wetlands are depicted on the Vermont Significant Wetlands Inventory maps.

### Addison County

NONE

### Bennington County

Dorset Marsh, Dorset, (43.23793, -73.09057), Established April 22, 1992, Wetland file 1990-03. The wetland buffer extends 100 feet from the delineated wetland boundary.

### Caledonia County

NONE

### Chittenden County

Northshore Wetland, Burlington, (44.52465, -73.27132) Established September 18, 2009, Wetland file 2000-03. The wetland buffer extends 300 feet from the delineated wetland boundary except where the easterly side of such buffer would encroach upon the City of Burlington recreational path, in which areas the buffer shall extend from the delineated boundary parallel to, and 25 feet westerly from, the centerline of the City of Burlington recreational path as it existed September 18, 2000.

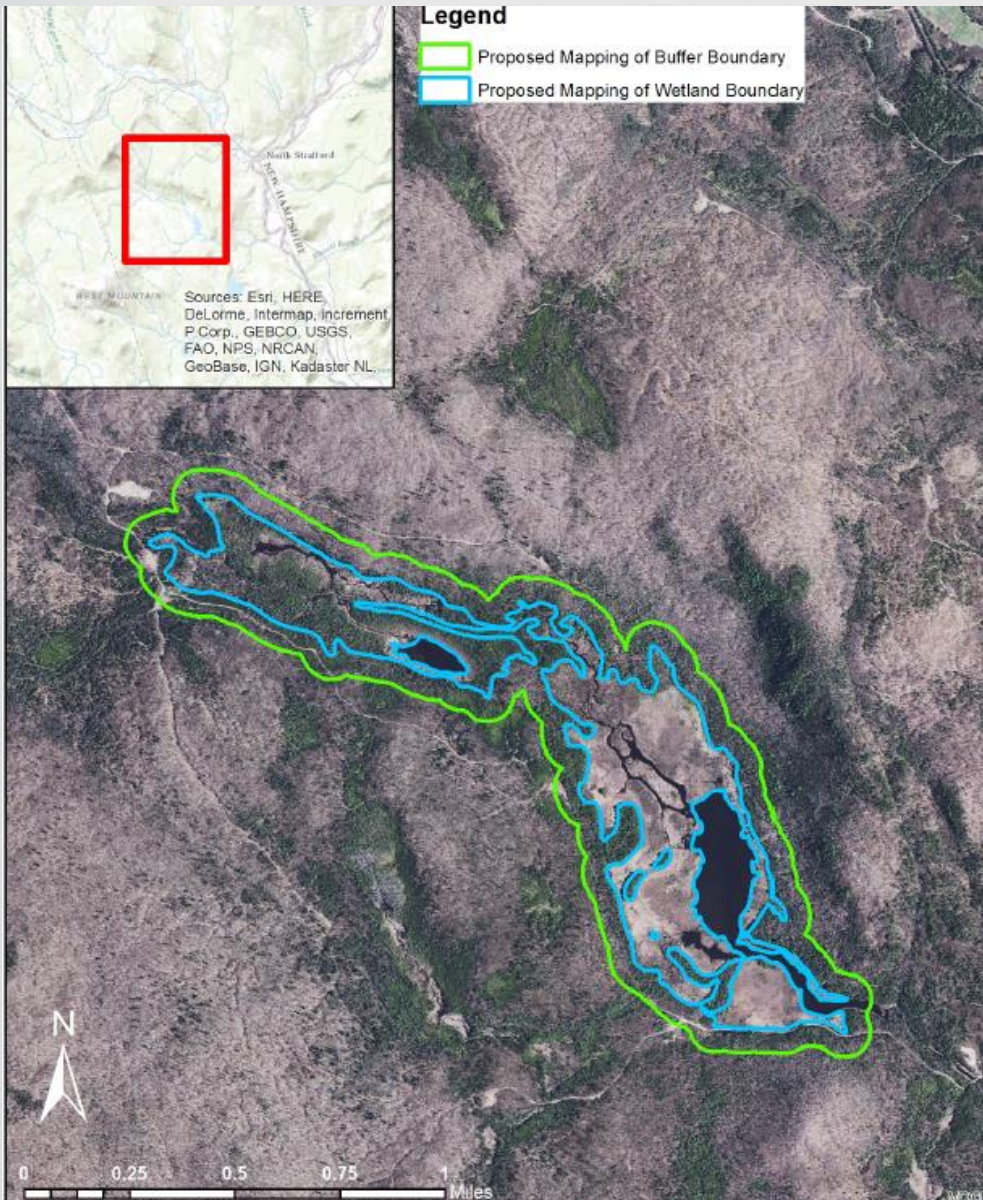
Sandbar Wetlands, Colchester and Milton, (44.61165, -73.23203 and; 44.62095, -73.23306). Established in 2017, Wetland file 2016-346. The wetland buffer extends 100 feet from the delineated wetland boundary.



Sandbar Wetlands

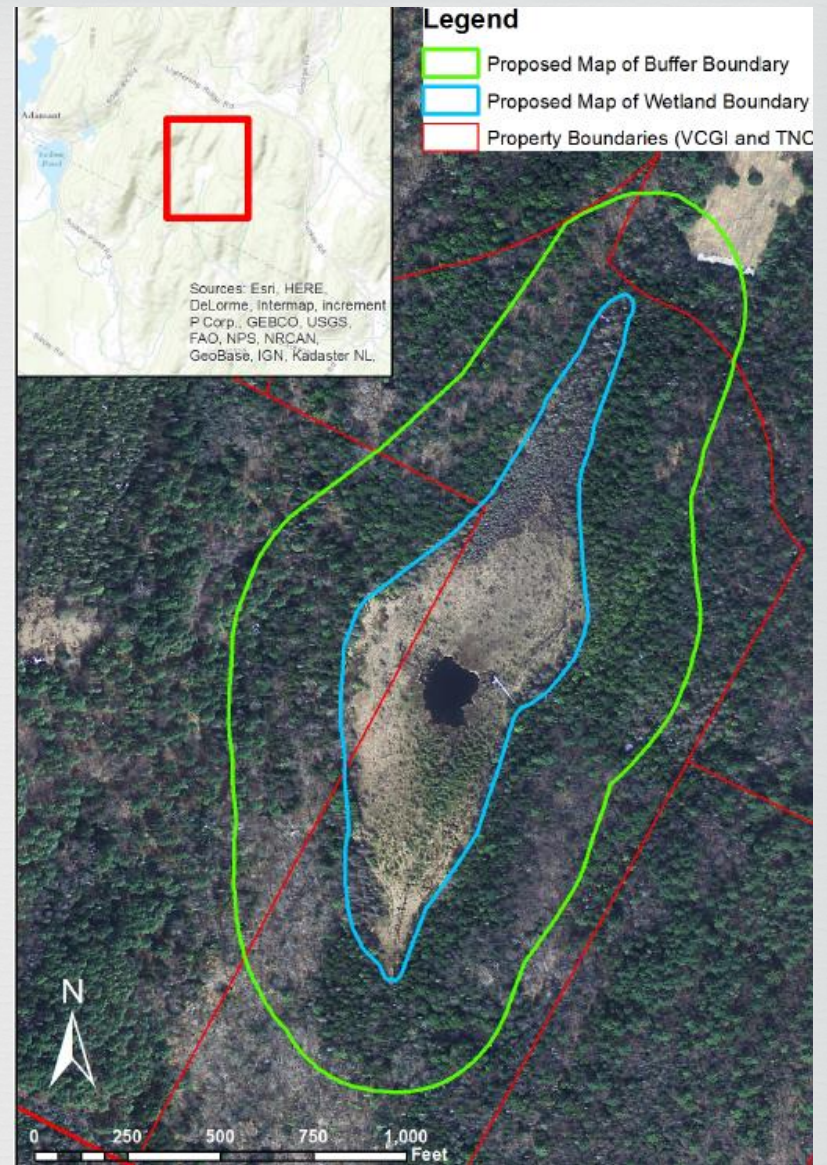


# Dennis Pond Wetlands





# Chickering Fen





# Water Resources Panel



- ❧ Act 138 of 2012 transferred wetland rulemaking authority from the Natural Resources Panel Board's Water Resources Panel to the DEC
- ❧ From 2012-2017: Panel = ANR Secretary
- ❧ Now: ~~Panel~~ Secretary
- ❧ Other Statutes updated

# Notice & Amendments



- ❧ Initiated by Act 150
  - ❧ Standardized procedures for permits & approvals issued by DEC
- ❧ Extended comment periods
  - ❧ IP: 15 day → 30 day. Draft permit also on notice.
  - ❧ GP: 10 day → 14 day. No notice sent to abutters. Notice posted online.
- ❧ Online Notice
  - ❧ Posted for app received, app admin complete, app tech complete, decision drafted, decision issued
  - ❧ Applicants:
    - ❧ Will now need to notify abutters of application submittal (earlier)
    - ❧ Longer notice periods
    - ❧ Request for a meeting will not extend the notice period
    - ❧ Standardized amendment process



# Amendments



- ❧ Admin changes- name changes, corrections in spellings, permit transfers etc. NO notice period.
- ❧ Minor- no tech review beyond what is in the original application. 14 day notice period.
- ❧ Major- anything so long as the project purpose is the same and changes meet the permitting standards. 30 day notice period.
- ❧ CANNOT be amended:
  - ❧ GP authorizations
  - ❧ Permits issued prior to April 1, 2017 other than administrative.

# Questions?



Thank you!